

**SMART EXAM RESOURCES**  
**9701 CAMBRIDGE AS CHEMISTRY**  
**TOPIC QUESTIONS AND MARK SCHEMES**  
**TOPIC :ATOMIC STRUCTURE**  
**SUB-TOPIC: ELECTRONIC CONFIGURATION**  
**SET-2-QP-MS**

**1**

Iron pyrite,  $\text{FeS}_2$ , has a yellow colour that makes it look like gold metal. The compound contains the ions  $\text{Fe}^{2+}$  and  $\text{S}_2^{2-}$ .

(a) (i) Give the full electronic configuration of  $\text{Fe}^{2+}$ .

$1s^2$  ..... [1]

**MARK SCHEME**

(a)(i)	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 (4s^0)$	2
		1

**2**

The first seven ionisation energies of an element, **A**, in  $\text{kJ mol}^{-1}$ , are

1012 1903 2912 4957 6274 21269 25398.

- (i) State the group of the Periodic Table to which **A** is most likely to belong. Explain your answer.

.....  
.....  
.....  
..... [2]

- (ii) Complete the electronic configuration of the element in Period 2 that is in the same group as **A**.

$1s^2$  ..... [1]

## MARK SCHEME:

(i)	Group V/5/15	1	
	Big difference between fifth and sixth ionisation energies	1	2
(ii)	$1s^2 2s^2 2p^3$ ecf from (b)(i) if period 2	1	1

**3** Neon is a noble gas.

(a) Complete the full electronic configuration of neon.

1s<sup>2</sup> ..... [1]

**MARK SCHEME:**

<b>(a)</b>	$(1s^2)2s^22p^6$	[1]	[1]
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